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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/713,524	11/15/2000	Ayad Beghdad		3620

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PERMAN & GREEN
425 POST ROAD
FAIRFIELD, CT 06824

EXAMINER	
MICHALSKI, JUSTIN I	
ART UNIT	PAPER NUMBER
2615	

DATE MAILED: 06/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/713,524	BEGHDAD, AYAD	
	Examiner	Art Unit	
	Justin Michalski	2615	

-- Th MAILING DATE of this communication app ars on the cover she t with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 March 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-12,14,16-26,28,36 and 38-45* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-12,14,16-26,28,36 and 38-45* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 23 February 2006 has been entered.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims are rejected under 35 U.S.C. 102(b) as being anticipated by Eatwell et al. ("Eatwell") (US Patent 5,768,473).

Regarding Claims 1, 14, 24, and 36, Eatwell discloses a noise suppressor, communications terminal, communications network, and method for provide a noise suppressed signal in which an estimate is made of the noise (estimator 3) and an estimate is made of speech together with a fraction of incoming noise (estimator 4), wherein the estimate of speech together with the fraction of the incoming noise is used to generate a noise reducing filter (Filter 5 and 8).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 3-12, 16-23, 25, 26, 28-35, and 38-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eatwell above in view of Pastor et al. (US Patent 6,445,801).

Regarding Claims 3, 16, 28, and 38 Eatwell does not disclose a variable estimate. Pastor further discloses the level of the noise included in the estimate of the speech together with some noise is variable so as to include a desired amount of noise in the noise suppressed signal (Col. 7, lines 38-45 disclose variable coefficient alpha). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a variable estimate to include a desired amount of noise suppression.

Regarding Claim 4, 17, 29, and 39 Pastor further discloses noise suppression in signals containing speech (i.e. context information) (Col. 1, lines 10-13).

Regarding Claims, 5, 18, 30, and 40 Eatwell does not disclose a noise below a mask limit. Pastor further discloses the level of the noise is below the mask limit of the speech and so is not audible to a listener (Col. 2, lines 49-56). Therefore it would have

been obvious to have a noise level below a mask limit in order to separate noise from a useful sound signal to be heard by a user.

Regarding Claims 6, 19, 31, and 41 Eatwell does not disclose the level of noise context information is left in the signal as the estimate of speech together with the fraction of noise approaches a limit. Pastor further discloses the level of noise in the estimate of the speech together with some noise approaches the mask limit of the speech and so some noise context information is left in the signal in order to avoid the risk of harming the intelligibility of the noise suppressed signal (Col. 12, lines 57-67). Therefore it would have been obvious to one or ordinary skill in the art at the time the invention was made to include noise in the signal in order to avoid the risk of harming the intelligibility of the noise suppressed signal as taught by Pastor.

Regarding Claims 10, 20, 32, and 42, Eatwell does not disclose a noise level estimated lower than the noise level in the signal containing noise. Pastor further discloses the estimate of speech together with some noise is estimated to have a noise level lower than the noise level in the signal containing noise in order to efficiently represent the noise signal (Col. 9, line 40 through Col. 10, line 14). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have an estimate of speech together with some noise is estimated to have a noise level lower than the noise level in the signal containing noise in order to efficiently represent the noise signal.

Regarding Claims 12, 22, 34, and 44, Eatwell does not disclose the use of a Wiener filter. Pastor further discloses noise reducing filters generalized and being a

commonly used Wiener filter (Col. 6, lines 17-28). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a commonly known filter such as a Wiener filter in order to filter out signal components (Col. 5, lines 7-12).

Regarding Claims 11, 21, 33, and 43, Eatwell does not disclose a reducing factor being applied. Pastor further discloses a reducing factor is applied to reduce the noise level of the estimate of speech together with some noise (Fig. 1, reference 4) relative to the noise level in the signal containing noise (references 2 and 3). Therefore, it would have been obvious to one or ordinary skill in the art at the time the invention was made for a reducing factor in order to compensate for energy and overestimation of the noise.

Regarding Claim 8, Pastor further discloses the estimated noise is power spectral density (see abstract).

Regarding Claim 9, Pastor further discloses the first estimation (Fig. 2, reference 2) is used to update the estimated noise (reference 4).

Regarding Claim 7, 13, 23, 35, and 45 Eatwell does not disclose adaptively producing a gain coefficient. Pastor further discloses a gain coefficient is produced in which a first estimation of the gain coefficient is made adaptively (Col. 2, lines 42-46) and this first estimation is used to produce a noise estimation which is then used to produce a second estimation of the gain function (Fig. 1, reference 4). Therefore, it would have been obvious to one or ordinary skill in the art at the time the invention was made use adaptive filtering in order to produce a more effective filter coefficient.

Conclusion

6. The Art Unit location of your application in the USPTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Art Unit 2615.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin Michalski whose telephone number is (571)272-7524. The examiner can normally be reached on M-F 7-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on (571)272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JIM

May 31, 2006

VIVIAN CHIN
SUPERVISORY PATENT EXAMINER
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